

Notice of Allowability

Application No.

10/723,494

Examiner

Christine Sung

Applicant(s)

VERNON, PHILIP

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/26/2003.
2. ☒ The allowed claim(s) is/are 1-14 and 26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>4/04</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Zychlewicz on February 9, 2006.

The application has been amended as follows:

Claims 15-25 are cancelled.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14 and 26, drawn to a method of determining a coincident event, classified in class 250, subclass 526.
 - II. Claims 15-23, drawn to a trigger circuit, classified in class 327, subclass 23.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the method for operating imaging system can calculate the coincident event using a conventional circuit that calculates the slope of the baseline and the

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slope of the pulse rise. Further the process does not require the specific elements of the trigger circuit of the product.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with William Zychlewicz on December 1, 2005, a provisional election was made with traverse to prosecute the invention of I, claims 1-14 and 26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Allowable Subject Matter

7. Claims 1-14 and 23 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding claims 1-14, none of the prior art of record discloses or makes obvious a method of operating a coincidence imaging system, namely the step of determining the intersection of the baseline and the pulse rise. References such as McCroskey (US Patent 6,255,655 B1), column 16, line 66-column 17, line 39, disclose a coincidence detection system where the baseline is corrected and then the slope of the pulse rise is used to determine that that a scintillation event has occurred. However, the instant application determines the *intersection* of

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the slope of the baseline and the pulse. Further other references such as Bronstein et al. (NPL- *High Energy Photon Detection in Positron Emission Tomography*) disclose a conventional linear regression model for determining the time of an event, but does not specify determining the intersection of the slope or line of the baseline and pulse rise. Further, other references such as Shrinkle (US Patent 4,634,896 A), disclose a peak indicator for determining coincidence, and has a digital peak detection circuit that determines the slope, but still does not disclose determining the intersection of the slopes. Further, other references such as Auger disclose detecting coincidence by comparing input signal and a reconstructed signal.

Regarding claim 23, none of the prior art of record discloses or makes obvious a method of determining a coincidence event, namely determining the step of determining an intersection of the baseline and the pulse rise to determine a coincident event. References such as McCroskey (US Patent 6,255,655 B1), column 16, line 66-column 17, line 39, disclose a coincidence detection system where the baseline is corrected and then the slope of the pulse rise is used to determine that that a scintillation event has occurred. However, the instant application determines the *intersection* of the slope of the baseline and the pulse. Further other references such as Bronstein et al. (NPL- *High Energy Photon Detection in Positron Emission Tomography*) disclose a conventional linear regression model for determining the time of an event, but does not specify determining the intersection of the slope or line of the baseline and pulse rise. Further, other references such as Shrinkle (US Patent 4,634,896 A), disclose a peak indicator for determining coincidence, and has a digital peak detection circuit that determines the slope, but still does not disclose determining the intersection of the slopes. Further, other

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references such as Auger disclose detecting coincidence by comparing input signal and a reconstructed signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US Patent 5,585,637 A- this reference discloses a method of coincidence detection with a trigger circuit.
- b. US Patent 4,837,439 A- this reference discloses a coincident detection apparatus with a conventional trigger circuit.
- c. EPO 747730 A2- this reference discloses a method of coincidence detection with a trigger circuit.
- d. NPL- High energy Photo Detection in PET- this reference discloses a conventional linear regression model to determine an event.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Friday 7-3 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CS

Christine Sung

Examiner

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OTILIA GABOR
PRIMARY EXAMINER